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## Oak Ridge Lessons Landfill/DD Learned Visit Notes

### Landfill Visit

Dave Stelzer, Bruce Mannenin and Gary Clemons represented LPP. We were escorted by John Michael Japp; on Thursday afternoon we visited the Oak Ridge EMWMF and given a tour of the landfill Steve Kuchera and Robin Manning (What names did I miss) who are involved in managing the facility. Key pieces of information gained:

1. The landfill currently accepts no RCRA waste but does accept asbestos wastes.
2. It has a planned capacity of 1.7M cubic yards and will occupy about 45 acres when completed. It presently contains mostly contaminated soil and debris from an Oak Ridge scrap yard that apparently contained DOE-generated materials; a small number of converters from Oak Ridge D&D.
3. The landfill is somewhat isolated in a wooded area and is served by private haul roads.
4. Waste deliveries are by trucks; deliveries are monitor/controlled by some type of radio communications system.
5. The operations are not required to provide daily clean soil cover over the disposed soils and debris.
6. Leachate is collected and treated by an ORNL treatment system.
7. Contact water is collected in a series of lagoons and is mostly released into nearby surface water, there have been few instances where this water violated discharge criteria.
8. There were some 6-8 converters from process building D&D that will be grouted and surrounded with concrete; the converters are whole. (Help me out guys I never understood why these converters were being specially handled)
9. The landfill construction and operational costs will be about \$130M when complete. Currently
10. The landfill engineer stated he did not like the contact water discharge system which requires piping through the liner; he would prefer a sump system wherein the collect water could be directly pumped out and transferred.

### D&D

Met with Jack Howard, Karen Deacon and Robert Stroud. Jack has been DOE's manager for D&D.

1. The EMWMF was not specifically designed to support D&D and Jack highly recommends through knowledge and consideration of D&D waste streams prior to approaching determination of WAC. The Oak Ridge D&D planning initiated with the idea all waste would be disposed of off site.
2. The process equipment for K-29, K-31 and K-33 has been removed and disposed of at Envirocare and NTS. Tech 99 levels prevented use of EMWMF; Buildings have been deconned but were unable to remove absorbed PCB and RAD contamination in spite deep removal into the concrete floor surfaces to the rebar. Given the high cost experienced and incomplete success they believe it's best to demolish and dispose of the buildings.

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Date 2-27-09

3. They are beginning to demolish K-25 and K-27 and plan to dispose of much of the process equipment in the landfill.
4. Jack strongly emphasized the value of using existing bridge cranes and the need to preserve them to support demolition.
5. Jack also strongly recommends we protect the buildings from rain intrusion; at Oak Ridge several buildings developed deteriorated roofs after shut down and rain intrusion has resulted in equipment and structural degradation; floors and equipment have collapsed and created unsafe working conditions which slows work and costs extra money.
6. Jack said it is difficult to predict locations and levels of Tech99 inside the process equipment/buildings.
7. Converters – 130 converters have been shipped off-site whole; all internal components were classified waste.
8. It's highly advantageous to de-classify as much waste as possible.
9. BNFL used a compactor on some waste items but Jack believes it is faster and cheaper to cut items when possible; highly recommends plasma torches and they must be sized properly to cut quickly. He said some tubing caught on fire during cutting and it's best to let them burn; OR demonstrated the fires create no hazardous releases.

#### WAC

Interviewed John Hampshire (BJ) who was intimately involved with EMWFM WAC development and approval.

General: WAC development and approval process was risk-based and lengthy; John characterized it as 10% science and 90% political. State regulators were difficult to convince and wanted to prevent converter disposal on-site.

1. EMWFM uses a volume-weighted limit for each isotope which allows them to dispose of small volumes of highly active waste at times; this is in contrast to Fernald which has maximum limits of each waste type. He believes the volume weighted approach is the best, he predicted we could not accept Fernald's WAC.
2. He warned us that outsiders will object to the on-site landfill including individuals representing the interest of Envirocare and NTS.
3. In spite of the EMWFM limitations it provides value; stated waste transportation out west averages \$1000/cubic yard. He advised we carefully evaluate costs of alternative disposal.
4. Oak Ridge DOE exercises self-approval for EMWFM wastes administered by its WAC Attainment team; EPA and state have overview/monitoring authority but do not vigorously exercise it.
5. Used Monticarlo modeling to support WAC risk justification; EMWFM modeling based on  $1 \times 10^{-5}$  and John advises we go for  $1 \times 10^{-4}$  if we can get regulators to buy in. Target receptor was a hypothetical drinking water well within 100 yards down-gradient of cell.
6. Recommended experts: Dr. Art Sutherland for modeling and Dana Williford (DOE transportation guru).

## Christian, Lottie

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**From:** Hill, Marc [HillMS@cdm.com]  
**Sent:** Wednesday, May 23, 2007 1:57 PM  
**To:** Christian, Lottie  
**Subject:** FW: Tennessee Visits  
**Attachments:** Oak Ridge Lessons Landfill.doc

Lottie,

FYI.

MSH

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**From:** Clemons, Gary  
**Sent:** Wednesday, May 23, 2007 11:48 AM  
**To:** Hill, Marc  
**Subject:** RE: Tennessee Visits

Marc, attached is an internal draft describing the Oak Ridge visit to discuss D&D and the EMWMF. Certainly this was support additional to documents OR provided that I would think Jud would want to give them credit for.

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**From:** Hill, Marc  
**Sent:** Wednesday, May 23, 2007 9:39 AM  
**To:** Clemons, Gary  
**Subject:** RE: Tennessee Visits

Thanks Gary,

MSH

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**From:** Clemons, Gary  
**Sent:** Tuesday, May 22, 2007 5:14 PM  
**To:** Hill, Marc  
**Subject:** RE: Tennessee Visits

Marc, I only made one trip to OR to visit the EMWMF, not several. I will have to look in the office tomorrow and try to recall the documents provided, this may be difficult to do with accuracy but I'm certain we received some documents from them.

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**From:** Hill, Marc  
**Sent:** Tuesday, May 22, 2007 4:13 PM  
**To:** Clemons, Gary  
**Subject:** Tennessee Visits

Gary,

5/24/2007

is trying to show DOE Headquarters how the folks in Oak Ridge, Tennessee have assisted DOE/PORTS with the D&D Program including the Disposal Cell process. During generation of the CD 1 documents, you made several trips to the landfill (EMWMF) in Oak Ridge, Tennessee; did you ask for and receive any "documents/publications" which may have assisted you during the conceptual design activities. Jud wants to know if the folks in Oak Ridge may have provided documentation as a means of assisting you.

Thank you,

MSH

5/24/2007